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RENEWABLE ENERGY AND CONSERVATION PROGRAM

PLEASE RETURN

Report to the

49th Montana Legislature

STATE DOCUMENTS COLLECTION

SEP - 3 1985

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HELENA, MONTANA 59620

Department of Natural Resources  
and Conservation

Larry Fasbender, Director

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PROGRAM DESCRIPTION

HELENA, MONTANA 59620

The Renewable Energy and Conservation Program, funded by Montana's coal severance tax, was established to reduce the state's reliance on fossil fuels through development and increased use of alternative energy forms, including solar, wind, geothermal, small-scale hydro, and biomass. In 1976 the Department of Natural Resources and Conservation (DNRC) offered its first grants to Montanans for research, development, and demonstration of renewable energy technology and for renewable energy education and public information projects. The 1983 Legislature expanded the scope of the program to include grants for energy conservation projects. To date, more than 250 projects have been financed in whole or in part through DNRC grants.

As the technologies advanced and Montanans became more receptive to energy innovations, a renewable energy industry began to develop. To encourage private sector development of sources of renewable energy, the Legislature further expanded the scope of the program in 1981 by authorizing renewable energy loans. Under the loan program, financial institutions cooperate with DNRC in offering loans below market rates to renewable energy businesses. The loan program, developed by DNRC, was designed to encompass commercial ventures and projects intended to generate income. To date, 17 loans have been awarded, for a total of over \$2 million.

The Renewable Energy and Conservation Program funds projects in various stages of development between the initial research of a technology and its possible commercialization. The grant program encompasses projects in the



earlier stages -- research, development, and demonstration. The loan program is designed for projects that involve renewable energy businesses or commercial development of a renewable energy product. Grant applications are submitted and evaluated separately from loan applications.

DNRC also solicits proposals for specific projects. When a need for a particular project or study has been identified, DNRC outlines project goals and sends out a formal Request for Proposals (RFP) inviting qualified individuals and organizations to bid competitively on the project.

### FUNDING ELIGIBILITY

Any individual or organization is eligible to apply for a grant, provided the grant project is conducted in Montana and is applicable to Montana's energy needs. Projects eligible for grants include renewable energy research, development, education, public information, and demonstration.

Any new or expanding business incorporated or authorized to do business in Montana is eligible to apply for a loan. The activities funded must be conducted in Montana and may include the development, design, building, manufacturing, marketing, distribution, or sale of a renewable energy technology, process, system, or system component. Renewable energy loans may not be used for refinancing.

Applications for grant funding during a fiscal year must be submitted by November 1 of that fiscal year. Loan applications have three deadlines each fiscal year: October 1, January 1, and March 1. Grant and loan applications may be submitted at any time during the year, but will be







reviewed on a competitive basis with all applications received before the respective deadline. The usual duration of grant projects is one year; all renewable energy loans must be repaid within 10 years. The maximum funding available for any grant or loan is 10 percent of the total Renewable Energy and Conservation Program appropriation for the year in which the application is submitted. For FY 1985, no more than \$333,600 can be awarded for any one project or to any single applicant.

DNRC staff reviews grant and loan applications for technical soundness, feasibility, public benefits, and potential environmental impacts. The applications and staff recommendations then are reviewed by the Renewable Energy Advisory Council, a seven-member citizen advisory group appointed by the governor. The final authority for grant funding and loan authorization rests with the DNRC director, after hearing the recommendations of the staff and council.

Renewable energy loans are administered by private financial institutions in Montana. Applicants receiving DNRC authorization present their proposals to the financial institutions of their choice. The participating institution then treats the application as it would any request for a commercial loan. If the lending institution approves the loan, DNRC will provide up to 90 percent of the loan principal at the current Federal Reserve discount rate, within the confines of available funds. The Federal Reserve discount rate has averaged between 8 1/2 and 10 percent for the past two years. The financial institution provides the remaining principal at a rate not exceeding its customary interest rate, considering the size of the proposal and the risk associated with it.

After the loan applications are reviewed by DNRC staff, the advisory council, and the DNRC director, the agency simultaneously notifies all



successful applicants that they are authorized to seek financing through a lending institution. The institution performs all necessary credit checks and other loan origination work, including the acquisition of all necessary security for its and DNRC's loan shares. The applicant is required to notify DNRC of what lending institution is selected and of that institution's decision, terms, and conditions. Once these arrangements are complete and financing has been successfully arranged, DNRC funds successful loan applications on a first-come, first-served basis, as long as money is available.

#### PROGRAM DEVELOPMENTS

#### FY 1984-85 BIENNIUM

During the FY 1984-85 biennium, DNRC has implemented several changes in the Renewable Energy and Conservation Program, based on recommendations from the Legislature, the Renewable Energy Advisory Council, and the Environmental Quality Council. These developments are highlighted below.

- \* In FY 1984 DNRC began awarding grants for conservation projects, based on the change in the law during the 1983 legislative session that made conservation projects eligible. Of the 13 grants totaling \$1,332,721 awarded that year, 3 totaling \$313,403 were for projects that were primarily conservation.



- \* An emphasis was placed on loans to renewable energy businesses. Eleven loans were authorized in FY 1983 and 1984 for a total of \$1,470,810. Eight of these loan applicants successfully arranged financing, and DNRC committed \$876,810 for loans during these years. These loans helped to create seven new businesses in Montana and approximately 35 new jobs.
  
- \* Loans have been made for alcohol plants, a wood pellet manufacturing plant, small hydroelectric and wind generation facilities, an energy product retail store, and wood collection businesses. Three companies receiving DNRC loans in earlier years have encountered difficulties. DNRC is working with the participating banks to resolve these problems and has agreed to start foreclosure proceedings on one loan.
  
- \* DNRC expanded its efforts to disseminate to the public the results of past grant projects. In addition to conducting workshops and issuing publications, DNRC expanded the Renewable Energy Report Library initiated in 1982. Each grantee is required to submit a final report describing the results of the project and potential benefit to other Montanans considering a similar project. More than 70 of the reports are available from DNRC and the Montana State Library.

To encourage the use of this information, DNRC has produced an introductory pamphlet for public distribution, along with a 30-page guide containing summaries of the reports available.





The reports are available from any public library through the State Library's interlibrary loan program.

\* DNRC completed several studies to assess the extent and availability of renewable resources for energy production. The completed studies include the following:

- an evaluation of agricultural and food processing waste as a source of alcohol feedstock,
- future needs for diesel fuel substitutes and extenders,
- an analysis of the power generation potential of ungauged streams in the mountains and high plains,
- the identification of areas with wind resources and publication of the Montana Wind Energy Atlas,
- projections of residential wood fuel use, and
- a microcomputer program that allows Montana homeowners to analyze the energy-saving potential of solar energy for heating their domestic water.

Based in part on the initial results of these studies, DNRC has identified the need for more research, development, and demonstration in vegetable oil seeds and other diesel fuel substitutes, wind-powered water pumps, and conservation of industrial process energy applicable to Montana. DNRC also is interested in research pertaining to indirect liquefaction of biomass, wood fuel gasification, and small fluidized bed combustion.





\* In FY 1983 DNRC completed a major market research study designed to provide demographic information for better targeting of its information and outreach efforts. Separate surveys were conducted for each of the following target groups: the general public, farmers and ranchers, large businesses, small businesses, builders, architects, lenders, appraisers, and real estate agents. Each survey provided information on the group's interest and awareness regarding conservation and renewable energy technologies, the level of use of these technologies, and the media by which the group acquires energy information. The results of these surveys have formed the basis for DNRC's integrated planning effort for federal, regional, and state energy information programs, including the Renewable Energy and Conservation Program.

This market research project is part of DNRC's attempts to better direct its energy information efforts, rather than simply to respond to unsolicited grant proposals. DNRC has added a component, on a trial basis, to the FY 1985 unsolicited grant cycle. In addition to accepting unsolicited proposals for information projects, DNRC is soliciting two-to-three-page summaries of ideas for projects to be accomplished during the next year. DNRC staff will review the summaries submitted, selecting those that are consistent with the overall goals of the program and that DNRC considers to be high priority for public information. These summaries, along with a tentative budget and work schedule, will be presented to the Renewable



Energy Advisory Council and ultimately to DNRC's director, at the same time as other grant proposals. Those ideas approved by the director either will be conducted directly by DNRC staff or will be developed into a formal request for proposals (RFP) for implementation during the following fiscal year.

Because these summaries involve significantly less work and less development than formal grant proposals, DNRC hopes this approach will make it easier for a wider variety of Montanans to be involved in the Renewable Energy and Conservation Program. DNRC has already received favorable comments on this approach; if the pilot attempt goes well, DNRC would increase its efforts to solicit summaries in future years.

- \* DNRC produced several publications under the Renewable Energy and Conservation Program during this biennium, including four "Information Units" — each a brief introduction to a renewable energy technology, with descriptions of projects in Montana and in-depth bibliographies for those interested in more detailed information. Units published during FY 1984 cover wind, small-scale hydropower, geothermal, and alcohol fuels. Volumes currently being drafted will discuss solar domestic hot water, superinsulation, and efficient wood burning. DNRC is also updating several of its major publications printed through this program, including the Montana Renewable Energy Handbook. Several other DNRC publications have been reprinted under this program, including Mobile Home Energy Savings and 12 Ways to Turn Down High Energy Bills.



- \* DNRC has conducted several workshop series across Montana, many of which were funded in part by the U.S. Department of Energy. These include consumer education workshops on solar and wood heating systems, builders' workshops on passive solar construction techniques, mobile home conservation workshops, and installers' workshops for domestic water heating systems.
- \* In an attempt to make a broader cross-section of Montanans aware of conservation and renewable energy and of the program itself, DNRC has diversified its public information efforts, based in part on the results of the market research study discussed above. The most notable change is a major increase in the use of television advertising and public service announcements.
- \* DNRC has continued to evaluate and improve its proposal review process to ensure successful projects. The guidelines for applying for grants and loans have been strengthened to reduce the number of proposals that do not merit serious consideration for funding. The review process has been modified slightly to offer applicants better opportunity to meet with DNRC staff and correct deficiencies in their proposals before a final staff recommendation is sent to the Renewable Energy Advisory Council.

The following limitations on grant funding have been added to this year's application guidelines booklet:





Private Projects — DNRC does not subsidize private conservation or renewable energy systems, or fund demonstration projects that duplicate similar efforts in nearby areas. Demonstration projects involving public buildings and facilities receive priority over other projects. The applicant must demonstrate the project's potential for substantial public benefit before any private system will be considered for funding.

Feasibility Studies — DNRC will fund a feasibility study only if it is unique; i.e., only if no similar study is being or has been conducted. Although most renewable energy projects are site-specific and require feasibility studies for each location, the basic questions to be answered and research methods used in such studies are well established. Such studies would not be funded. Any new feasibility study that is funded must clearly articulate its methods so that others might replicate the study.

Monitoring Projects — DNRC will not fund unsolicited proposals for system performance monitoring or for monitoring of renewable energy resources. To avoid duplication and inefficiency, DNRC is coordinating all monitoring efforts and funding them through solicited grants, where necessary.



## SUMMARY

The Renewable Energy and Conservation Program has undergone numerous changes during the FY 1984-85 biennium. Most significant is the eligibility of energy conservation projects for grants; this allows the program to address renewable energy and conservation in an integrated and more cost-effective manner. The remaining changes focus on providing better direction for the program, rather than allowing it to evolve strictly on the basis of the unsolicited applications received and projects funded during the grant and loan cycles. Other significant developments include expanded and diversified efforts to disseminate the information resulting from the program and to make a wider variety of Montanans aware of and able to benefit from conservation and renewable energy.





